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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,893	12/31/2003	William Thomas Carter JR.	RD-28158-1	8902
6147 7590 10/31/2007 GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			EXAMINER KASTLER, SCOTT R	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 10/31/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/749,893	Applicant(s) CARTER ET AL.	
	Examiner Scott Kastler	Art Unit 1793	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13, 15-17 and 19-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17 and 19-35 is/are rejected.
- 7) ☒ Claim(s) 15, 16 and 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Claim Objections***

Claims 4, 7, 21-26, 29 and 30 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The above claims are not properly further limiting for the following reasons:

1. With respect to claims 4, 7, 21-26, 29 and 30, these claims recite only materials to be processed by the claimed apparatus (specific metals or compounds to be used) and it has been well settled that the manner or method of use of an apparatus cannot be relied upon to further distinguish claims to the apparatus itself. see MPEP 2114 and 2115.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu et al. Shimizu et al teaches an electroslog cold hearth system including a cold hearth vessel (2) which could hold a pool of liquid metal and a slag layer, an ingot mold (1) communication with the vessel (2) through an overflow dam (see fig. 3 and col. 2 line 65-col. 3 line 5 for example) and a source of raw material in the form of a consumable electrode (5) laterally set off from the ingot

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mold (1) thereby showing all aspects of the above claim since the manner or method of use of an apparatus, or the type of material processed by an apparatus cannot be relied upon to fairly further limit claims to the apparatus itself. See MPEP 2114 and 2115.

Claims 1, 4-13, 17 and 19-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Jackson et al. Jackson et al teaches an electrosag cold hearth refining system, including a water cooled copper hearth (90 and 300B for example) with water cooled overflow walls leading to an ingot mold (116B for example) where any liquid slag and metal within the hearth can be heated electrically through the use of an electrode (see col. 6 lines 50-51 for example, where electrodes are recited as a suitable heat source) which can be moved both vertically and horizontally with respect to the hearth and where the source material is supplied from a location (52) both above and laterally removed from the mold, thereby showing all limiting aspects of the above claims since the materials processed or used with the claimed apparatus cannot be relied upon to further distinguish claims to the apparatus itself. See MPEP 2114 and 2115.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al in view of Shimizu et al. As applied to claim 1 above, Jackson et al shows all

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aspects of the above claims except the use of a consumable electrode as the source of the material. Shimizu et al teaches that electrodes were known in the art at the time the invention was made as desirable source materials for electrosag cold hearth refining, where the electrode is melted or consumed. It is noted that the above rejected claims do not require that the consumable electrode be connected to any electrical power source, only that it supply the source material for refining. Because Jackson et al also processes material in substantially the same manner as Shimizu et al, motivation to provide the material in the more efficient electrode form described by Shimizu et al to the system of Jackson et al, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

#### ***Allowable Subject Matter***

Claims 15, 16 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

Applicant's arguments filed on 9/11/2007 have been fully considered but they are not persuasive. Applicant's argument that claims 4, 7, 21-26, 29 and 30 do fairly further limit the independent claims from which they depend is not persuasive. As stated in the above rejection, these claims recite either methods of use of the claimed apparatus or types of materials to be treated by the claimed apparatus. It has been well settled that where, as in the instant case, the applied prior art could be employed to either treat the recited material to be acted upon or

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operated in the manner recited in a claim, whether or not the materials to be treated or the method of operation is disclosed or suggested by the applied prior art, then the materials acted upon or the manner or method of use of the claimed apparatus cannot be relied upon to fairly further distinguish the claimed apparatus from the applied prior art. See MPEP 2114 and 2115.

Again, applicant's argument that the applied references do not show a liquid slag layer is not persuasive because this again, is a limitation dealing with the manner or method of use of the claimed apparatus and alone, cannot be relied upon to fairly further distinguish the apparatus from the applied prior art.

Applicant's argument that the applied prior art does not disclose a power source is not persuasive because as stated in the above rejections the electrical supply to the electrodes of both of Shimizu et al and Jackson et al meet the requirements of a power supply.

Finally applicant's argument that the electrode be in contact with a slag layer is again a limitation dealing with the manner or method of use of the claimed apparatus and cannot as stated above be relied upon to fairly further limit claims to the apparatus itself.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

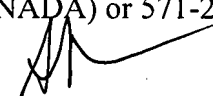
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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (571) 272-1243. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Scott Kastler  
Primary Examiner  
Art Unit 1793

sk